

**Test Wednesday Feb. 16**

1. What are the two basic categories of energy?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
2. The formula for gravitational potential energy is \_\_\_\_\_.
3. The formula for kinetic energy is \_\_\_\_\_.
4. The law of conservation of energy states that energy can be changed from one form to \_\_\_\_\_, but cannot be \_\_\_\_\_ or \_\_\_\_\_.
5. Energy of position is \_\_\_\_\_ energy.
6. Energy of motion is \_\_\_\_\_ energy.
7. An apple hanging from the branch of a tree has \_\_\_\_\_ energy.
8. When the apple falls, it picks up speed, and has increasing \_\_\_\_\_ energy.
9. A child sitting at the top of a sliding board has stored energy, or \_\_\_\_\_ energy.
10. Once the child lets go, and begins to descend, it will have \_\_\_\_\_ energy, since it is in motion.
11. The maximum kinetic energy of a roller coaster would be found when the car is \_\_\_\_\_.
12. The maximum potential energy of a person skiing would be when the person is \_\_\_\_\_.
13. The units for potential energy are \_\_\_\_\_.
14. Name the form of energy in each of these definitions:
  - a. Periodic vibration of atomic particles, requires a medium. \_\_\_\_\_
  - b. Energy carried by charged particles moving through a conductor.  
\_\_\_\_\_
  - c. Energy whose principle source is the sun, does not need a medium. \_\_\_\_\_

- d. Energy associated with movement, position, or condition of physical objects; includes potential and kinetic energies \_\_\_\_\_
- e. Energy stored between the bonds of atoms; found only in matter \_\_\_\_\_
- f. Energy released or absorbed during nuclear changes \_\_\_\_\_
- g. Random vibration of atomic particles, requires a medium, powers many natural resources, associated with heat \_\_\_\_\_
- h. Energy exerted by natural magnets and moving electrical charges \_\_\_\_\_

15. Be able to calculate the potential energy when given a problem.

- a. A 40 kg child climbs a tree and stops on a branch that is 4 meters from the ground. What is the child's potential energy.
  
  
  
  
  
  
  
  
  
  
- b. If a 3 kg book is held 2 meters in the air, what is its potential energy?

16. Be able to explain how roller coasters work and where there is the maximum and minimum potential and kinetic energy.